Summary: PMI Laboratory Experiments (session 5)

5.1 D. Ruzic – FLiRE
- new "ramp hollow cathode" plasma source increased He^+ current density ≈20x
- working to clean up Li, increase Li flow rate, lower T, then measure again He retention in Li(l)

5.2 M. Coventry – IIAX
- new sample holder for high-temp Sn sputtering measurements up to 800 °C
- increasing projectile mass increases S_y, but lessens its dependence on T

5.3 T. Gray – ESP-gun
- increased energy deposition 2x to ≈1 J/cm^2-pulse
- working to achieve higher discharge energy, reduce noise, and measure heat flux

5.4 D. Whyte – DIONISOS
- first PMI study: 100 eV D (10^{17} /cm^2-s) retention in Mo
- .05% retention linearly increases with fluence, dynamic inventory 2x long term

5.5 M. Baldwin – PISCES-B
- Be-seeded plasma deposition on W results in surface alloying
- Be-W alloys form at lower substrate temps than phase diagram would indicate

5.6 D. Nishijima – PISCES-B
- small beryllium concentration in plasma can suppress carbon chemical erosion
- developed scaling law, which suggests protective Be layers can be formed between ELMs

5.7 E. Hollmann – UCSD
- H_2^+ and H_3^+ formation readily occurs in cool, dense plasmas
- molecular ion formation/excitation is a heat loss mechanism if $T_e < 4$ eV